CDW-1T0 Visibility sensor

For weather automation applications

Features

- Applicable to highway, port, ship and environmental visibility detection
- Using aluminum alloy material, strong and lightweight
- Hood heating for use in extreme environments
- Simple structure, good working stability, high reliability, low energy consumption, easy to use and maintain
- Not affected by local lights

The forward scatter measurement principle and unique design ensure the output is both accurate and reliable in all weather conditions and will not be influenced by local lights sources, even those that flash.With a measurement range of 10m to 10km the sensor is suitable for use in road and aviation constructed from robust aluminium and finished with a high quality powder coat, the sensor will provide years of reliable service. Heating of the optical windows and sensor hoods is provided as standard allowing use in the harshest of conditions.Both optical windows are monitored for contamination and the visibility output is automatically compensated to reduce maintenance requirement.

Typical installation locations

- Altitude highway
- Meteorological safety
- Public place
- Environmental safety monitoring

Design structure

Visibility sensor has many important features. First, it has high precision measurement capabilities. It can accurately reflect the change of concentration under different environmental conditions, and provide reliable data support for traffic, meteorology and other fields. Secondly, the response speed is fast. It can respond to changes in atmospheric conditions in a short time and update the concentration information in time. Moreover, it has good stability and reliability, and can continue to work under various complex climatic conditions.

Easy installation

For the transportation field, it can be installed along the road, bridge or tunnel entrance and other locations; For meteorological observation, it can be installed in the observation field of the weather station; For airports, it can be installed near the runway.According to the characteristics of the installation position, choose the appropriate support type, such as column support, wall mounted support, etc.

Reliable operation

When installing sensors, environmental factors should be considered, and appropriate installation positions and protective measures should be selected to reduce the impact of the environment on the sensor. For example, protective covers, waterproof boxes and other devices can be used to protect the sensor from the outside environment.

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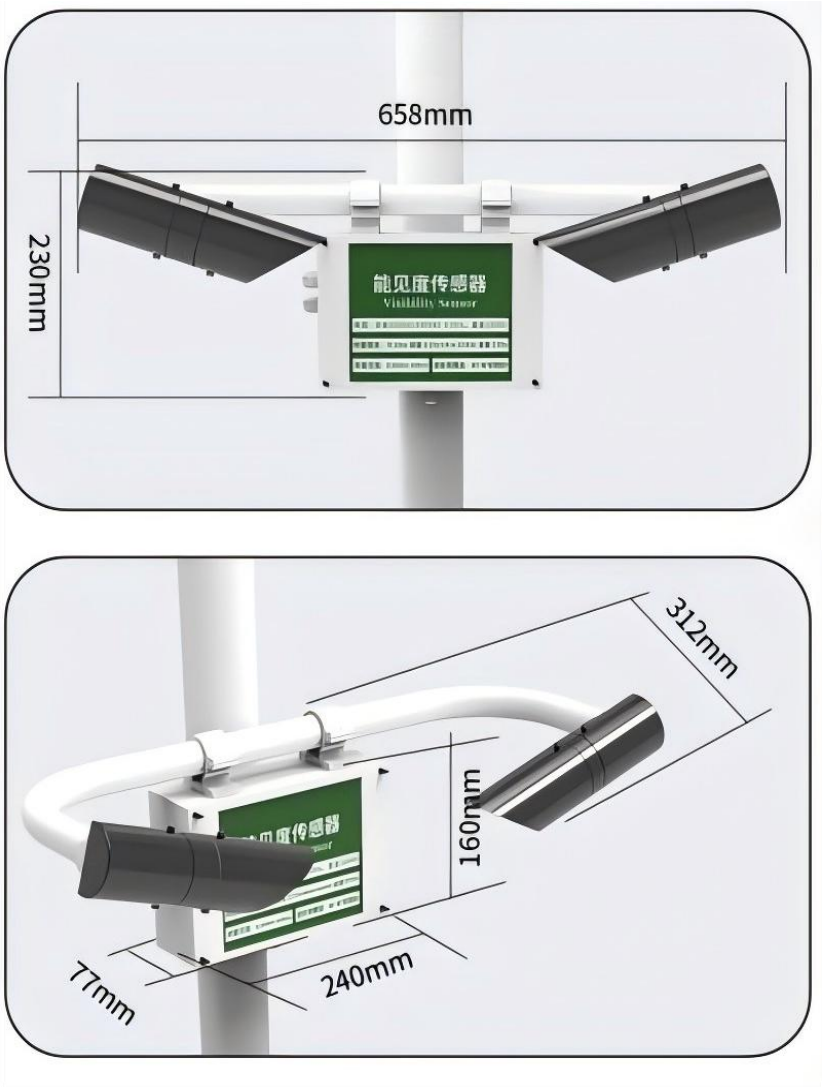
Dimensions & installing

CDW-1T0 connector dimension



Mounting

Mounting bracket

According to the characteristics of the installation position, choose the appropriate support type, such as column support, wall mounted support, etc.

Install the bracket firmly in the selected position using an expansion bolt or other fastening method. Make sure the bracket is level, stable and able to withstand the weight of the sensor.

Installing a sensor

The sensor is fixed to the bracket, usually by bolting or clamping. Ensure that the sensor is securely installed without loosening or shaking. According to the type and installation requirements of the sensor, the direction and Angle of the sensor are adjusted so that it can accurately measure the concentration of the surrounding environment.

Connecting cable

Connect the cable of the sensor to the corresponding measuring instrument or control system. Pay attention to the length and direction of the cable to avoid stretching, squeezing, or damage to the cable.
When connecting the cable, pay attention to the polarity of the cable and the correct wiring method to avoid wrong connection resulting in wrong measurement results.

Perform debugging and calibration

After installation, the sensor is debugged and calibrated to ensure its measurement accuracy and reliability.
The sensor can be calibrated using a standard concentration source or reference instrument, or debugged according to the sensor's instructions

Technical data

Measurement performance, models CDW-1T0

Item	Technical Specification
Measurement Range	0-10Km/0-20Km/0-30Km
Measurement principle	Forward scatter (30° -40°)
Resolution	1m
Accuracy	＜2Km ±2% ， 2Km-10Km ±5%
Data update rate	1s(default)
Supply	12VDC 110VAC/220VAC ±20%
Output	RS485
Power Consumption	Approx.1W,
Dimension	658mm*312mm*230mm
Installation	Hoop installation
Lifetime	>10 Years
Operating Temperature	-40℃-+70℃@0-100%RH
Weight	3kg

Model number	Type	Output	Special features
CDF-10A	Wind speed	Pulses(PNP) RS485 4-20MA 0-5V	Three cup plastic wind speed
CDF-11A	Wind direction	RS485 4-20MA 0-5V	Plastic wind direction sensor
CDG-10B	Solar radiation	0-5V,4-20mA,RS485	Spectral range:300～1100nm
CDG-14A	Illuminance sensor	0-5V 0-10V 4-20mA RS485	Spectral range:380～780nm
CDY-12A	Economical Tipping Bucket Rainfall	Pulses(@10kΩ&0.01uF),RS485	Diameter :φ200mm, height: 271mm
CDW-10A	Wall-mounted Barometric Pressure	RS485,4-20mA,0-5V, 0-10V	Barometric range 600-1100hPa(mbar)
CDW-12A	CO2 sensor	4-20mA,0-5V,RS485	Range 0-2000ppm ,0-5000ppm,0-10000ppm
CDW-13B	Noise sensor	RS485	Range 30-130dB
CDW-14A	Paste Type Temperature	PT100 PT1000 RS485	Range -50-+100℃, -20-+50℃
CDW-21A	Dust sensor	RS485 4-20mA,0-5V,0-10V	PM1.0,PM2.5,PM10
CDW-22A	Leaf Wetness	4-20mA,0-5V,0-2V,RS485	Wetness: 0-100% Temperature: -40-+80℃
CDW-33A	Atmospheric Temperature,Humidity & Pressure	RS485	Shelter installation
CDW-15A	O2 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-30%
CDW-16A	SO2 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-20PPM 0-2000PPM
CDW-17A	NH3 Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-100PPM 0-1000PPM 0-5000PPM
CDW-18A	H2S Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-100PPM 0-1000PPM
CDW-19A	CO Concentration	4-20mA,0-5V,0-10V,RS485	Range 0-1000PPM 0-2000PPM
CDW-1T0	Visibility sensor	RS485	Range 0-10Km/0-20Km/0-30Km
CDW-1TX	Multi-in-one gas Sensor	RS485	Multi-parameter integration

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